

Attorney Docket # 1781-73RE



AF/GP 3744 #14
Patent
12-15-99

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reissue Application of

Heikki ILVESPÄÄ

Serial No.: 08/861,231

Filed: May 21, 1997

For: Method and Apparatus for Reduction of Curling
of Paper in the Drying Section of a Paper
Machine

Examiner: Wilson, Pamela
Group Art: 3744

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October 19, 1999

(Date of Deposit)

Chi K. Eng

Name of applicant, assignee or Registered Representative

Signature

October 19, 1999

Date of Signature

Board of Patent Appeals and Interferences
Washington, D.C. 20231

APPEAL BRIEF

SIR:

This is an appeal, pursuant to 37 C.F.R. §1.192(a) from the decision of the Examiner in the above-identified reissue application, as set forth in the Final Office Action dated July 20, 1999 wherein the Examiner finally rejected applicant's reissue claims, (which are reproduced in Appendix A attached hereto). A Notice of Appeal was filed on July 29, 1999.

This Appeal Brief is being submitted in triplicate.

The fee of \$300 for filing an Appeal Brief (Large Entity) pursuant to 37 C.F.R. §1.17(f) is submitted herewith. Any additional fees or charges in connection with this application may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

I. REAL PARTY IN INTEREST

Valmet Corporation, assignee of applicant, Heikki Ilvespää, is the real party of interest in the above-identified reissue application.

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II. RELATED APPEALS AND INTERFERENCES

There are no other appeals and/or interferences related to the above-identified application at the present time.

III. STATUS OF CLAIMS

Claims 1 to 25 are allowed; claims 27 and 35 have been cancelled, without prejudice; claims 26, 28-34 and 36-41 stand rejected. Claims 26, 28-34 and 36-41 are on appeal.

IV. STATUS OF AMENDMENTS

There have been no Amendments filed subsequent to the final Office Action.

V. SUMMARY OF THE INVENTION

The present invention is directed to a method and a paper machine for reducing curl in a paper web. (Col. 1, lines 7 through 9 of the original specification.) The tendency of a paper web to curl is affected by, among other factors, anisotropies produced in the paper during drying, i.e. anisotropies in the direction of the plane of the paper and/or in the z-direction (i.e., the direction of thickness). (Col. 2, lines 55 through 61 of the original specification.) Reducing the tendency of paper, particularly fine paper, to curl has become more and more important because new printing and copying machines require the paper to be fed at high speed and typically along a sinuous path through the machine. (Col. 2, lines 48 through 55 of the original specification.) These printing and copying machines also require intense heat to be applied to one side of the paper for imaging purposes. (Col. 2, lines 48 through 55 of the original specification.) However, such an application of heat causes any internal stresses remaining in the paper to release, thus causing the paper to curl. (Col. 2, lines 49 through 55 of the original specification.) Such curl often produces paper jams in the copy machine's transport mechanism. Therefore, it is advantageous to provide a method and a papermaking machine for producing paper with little or no tendency to curl. (Col. 3, lines 43 through 47 of the original specification.)

According to one aspect of the invention, as claimed in the appealed reissue claims, the paper web is asymmetrically dried in its thickness direction to a solids content at which curl-inducing stresses are formed in the paper web by passing the paper web through a plurality of top-felted single-tier normal dryer groups R_2 . (Col. 7, lines 46 through 51; col. 2,

lines 61 through 65; and col. 6, lines 8 through 14 of the original specification.) Each of the normal dryer groups R_2 includes a single tier of heated dryer cylinders 20, guide rolls disposed below and between the dryer cylinders 20, and a single wire 21 transporting the web over the heated dryer cylinders 20 and beneath the guide rolls in such an arrangement that only the bottom side of the web engages the heated dryer cylinders 20. (Col. 6, lines 8 through 14 of the original specification.) It is the one sided or asymmetrical application of heat to just the bottom side of the web that induces the stress in the web to cause it to curl. Heat and moisture are subsequently applied to the asymmetrically dried paper web to relax the stresses in the fiber mesh of the paper web, to thereby control curling of the web. (Fig. 5B and col. 8, lines 32 through 44 of the original specification.)

Applicant notes that this subject matter was disclosed in the original specification but not claimed during prosecution of the original patent.

VI. SUMMARY OF PROSECUTION OF THE ORIGINAL PATENT

The broadest application claim of the original patent application was independent method claim 1. The original application claim 1 recites: A method for reducing the tendency of paper to curl in a drying section of a paper machine comprising the steps of drying a paper web by pressing the web against heated faces of a plurality of drying cylinders in the drying section of a paper machine having a twin-wire and/or a single wire, and applying a sufficient amount of steam onto the entire width of the paper web in the drying section such that tensions that have been formed or that tend to be formed in the fiber mesh are relaxed by means of heat and moisture from the steam in the area of their formation or thereafter.

This claim requires a drying section to have either a single-wire and/or a twin-wire (as required by a single tier or a double tier drying section) to dry a paper web and the application of steam onto the paper web to relax tensions formed or tend to be formed in the fiber mesh of the web. As persons of ordinary skill in the art readily recognize, this claim, unlike the appealed reissue claims, includes within its scope a multitude of drying section configurations such as, for example: a double felted double tier drying section, a double tier single felted serpentine drying section, a top felted double tier drying section, a bottom felted double tier drying section, and an alternating drying section having a top-felted dryer section followed by a bottom-felted section.

The broad scope of the original application claims is justified by the fact that the present invention solves the long-standing problem of paper curl arising from the drying process, a problem that affects all drying sections to varying degrees. In contrast the appealed reissue claims are limited to only one type of drying section, namely, a drying section having only top felted single tier normal dryer groups wherein heat is applied to only one side of the paper web. Thus, this never-presented limitation is material as it significantly narrows the scope of the appealed reissue claims, when compared with the original application claims.

A careful review of the prosecution history of the original application reveals that the Applicant did not surrender the subject matter of the appealed reissue claims:

In response to a first Office Action, Applicant narrowed application claim 1 to require that the steam be applied to an open face of the paper web as it runs through the drying section. Applicant points out that this limitation applies to all drying section configurations.

In response to a second Office Action, Applicant narrowed application claim 1 by adding the limitation that the paper web runs on a wire. Applicant notes that this limitation is included in the appealed reissue claims.

In response to a third Office Action, Applicant further narrowed application claim 1 to require that the paper web has opposed top and bottom sides, and after the bottom side of the web separates from the heated face of a drying cylinder, the temperature of the bottom side of the web is raised by applying a sufficient amount of steam applied onto the bottom side of the web to control the moisture gradient in the thickness direction of the paper web. Applicant also points out that these limitations do not restrict the scope of the original claims to a drying section comprising all top-felted single tier normal dryer groups.

In summary, none of the limitations added in the original patent prosecution limits the scope of the original application claims to a particular specie of drying sections: a drying section comprising only top felted single tier normal dryer groups wherein heat is applied to only one side of the paper web. Thus, the scope of the original application claims is broader than that of the appealed reissue claims. Therefore, the newly-added limitations of the reissue claims have modified the scope of the reissue claims such that there is no recapture of the surrendered subject matter.

VII. ISSUE

Whether reissue claims 26, 28 through 34, and 36 through 41 are unpatentable under 35 U.S.C. §351 as being an improper recapture of subject matter surrendered during prosecution of the original patent.

VIII. GROUPING OF CLAIMS

The rejected claims are claims 26, 28 through 34, and 36 through 41, of which only claims 26 and 34 are independent. These claims stand or fall together.

IX. ARGUMENTS

A. A Summary Of The Final Office Action With Respect To The Rejected Claims

In the Final Office Action dated July 20, 1999, original claims 1 through 25 are allowed; and reissue claims 26, 28 through 34 and 36 through 41 are rejected under 35 U.S.C. § 351 as being "an improper recapture of claimed subject matter which broadens the scope of the claims of the original patent upon which the present reissue application is based." The Examiner cited In re Clement, 45 U.S.P.Q.2d 1161 (Fed. Cir. 1997) in support of the rejection.

The examiner's entire basis for the rejection was that:

"Claims 26, 28 through 34 and 36 through 41 do not contain specific claim limitations which were amended into the claim language, of the original patent, in an effort to define the applicant's invention over the prior art; and thus, the lack of this amended claim language is considered to violate the doctrine of recapture."

The Examiner further stated that "the following claim language, from the original patent, is believed to be absent from the newly submitted claims of the present reissue application":

"The application of a steam treatment to an open face of a paper web, during the run of the web through the drying section of the paper machine; wherein, the web has opposed top and bottom sides and by pressing the bottom side of the web against the drying cylinders as the web runs on a wire (or a free draw), after the bottom side of the web separates from the heated face of the drying cylinders, the temperature of the bottom side of the web is raised by applying a sufficient amount of steam onto the bottom side of the

web for the purpose of controlling the moisture gradient in the thickness direction of the paper web between the paper sides.”

The Examiner rejected applicant’s argument based on the recapture rule set forth in Hester Industries, Inc. v. Stein, Inc., 46 U.S.P.Q. 2d 1641 (Fed. Cir. 1998) and stated:

“In response to the applicant’s arguments which contend that In re Clement is not applicable to the claims here in issue and that the more recent findings of Hester Industries, Inc. v. Stein, Inc., 46 U.S.P.Q.2d 1641 (Fed. Cir. 1998) are more relevant to the facts of the application, the examiner respectfully disagrees.”

B. The Recapture Rule Set Forth In Hester Industries Is Relevant To This Application

The principles of the recapture rule applied in Hester Industries, Inc v. Stein Inc., 46 U.S.P.Q.2d 1641 (Fed. Cir. 1998) are applicable to the facts of the present application; indeed, they are controlling. At issue in Hester were two reissue patents directed to a high humidity steam cooker for cooking food items such as poultry and other meat products. The cooker has a cooker chamber in which a steam atmosphere is maintained. The food products are carried through the cooker chamber on a conveyor belt that runs through a spiral path. Efficient cooking is achieved without the loss of humidity, flavor, or appearance by maintaining a water-drop-free steam atmosphere within the chamber at near 100 degrees C and 100% humidity, at above atmospheric pressure. Claim 1 of the original patent specifies that the cooking system cooks solely with steam and that the system includes two sources of steam to provide the steam atmosphere. During the prosecution of the original patent, the applicant repeatedly emphasized the "solely with steam" and "two sources of steam" features of the claimed invention in attempting to establish patentability over the prior art. However, the requirement that cooking is done "solely with steam" and the "two sources of steam" limitations are absent from each of the reissue claims. The Court held that the applicant surrendered claim scope that does not include these limitations. The Court then stated:

Finally, because the recapture rule may be avoided in some circumstances, we consider whether the reissue claims were materially narrowed in other respects. See, e.g., Mentor, 998 F.2d at 996, 27 USPQ2d at 1525 ("Reissue claims that are broader in certain respects and narrower in others may avoid the effect of the recapture rule."); Clement, 131 F.3d at 1470, 45 USPQ2d at 1165. For example, in Ball

the recapture rule was avoided because the reissue claims were sufficiently narrowed (described by the court as "fundamental narrowness") despite the broadened aspects of the claims. 729 F.2d at 1438, 221 USPQ at 296. In the context of a surrender by way of argument, this principle, in appropriate cases, may operate to overcome the recapture rule when the reissue claims are materially narrower in other overlooked aspects of the invention. The purpose of this exception to the recapture rule is to allow the patentee to obtain through reissue a scope of protection to which he is rightfully entitled for such overlooked aspects."

Id. at 1649-1650. (emphasis added.)

The Court then compared the scope of the asserted reissue claims and that of the original claim 1 noting that the "reissue claims are not materially narrower" because the added terms "spiral conveyance path" and "high humidity steam" are the same as or broader than the limitations in the original claims. Id. at 1650. In particular, the original claim 1 specifies a steam atmosphere "at near 100% humidity 100 degrees C and a pressure above atmospheric." Id. It was further noted that these added limitations were not aspects of the invention that were overlooked during prosecution of the original patent since they were included in original claim 1. The Court therefore concluded that the reissue claims failed to meet the "error" requirement of 35 U.S.C. §251 because they impermissibly recaptured surrendered subject matter. Id., at 1651.

But unlike the reissue claims in Hester, the reissue claims of the present application do contain material limitations that were overlooked in the original patent prosecution, namely:

Asymmetrically drying the paper web in its thickness direction extending between the top and bottom sides of the paper web to a solids content at which curl-inducing stresses are formed in the paper web by passing the paper web through a plurality of top-felted single-tier normal dryer groups, each of the plurality of normal dryer groups including a single tier of dryer cylinders, a plurality of guide rolls disposed below and between the dryer cylinders, and a single wire transporting said web over the dryer cylinders and beneath the guide rolls so that only the bottom side of the web engages the dryer cylinders.

A person of ordinary skill in the art will readily recognize that the scope of the reissue claims is materially narrower than that of the original application claims. By way of illustration, the original application claims include within their scope both symmetric and asymmetric drying of a paper web by numerous types of dryer sections including, for example: a double felted double tier drying section, a double tier single felted serpentine drying section, a top felted double tier drying section, a bottom felted double tier drying section, and an alternating drying section having a top-felted dryer section followed by a bottom-felted dryer section. In contrast, the reissue claims require that the paper web be asymmetrically dried and by one and only one type of drying section, i.e. one comprising a plurality of top-felted single-tier normal dryer groups.

This exception to the recapture rule is well settled in the law. The U.S. Claims Court in Patecell v. U.S., 12 U.S.P.Q.2d 1440, 1447 (Cl. Ct. 1989) explained this exception to the recapture rule in the following way:

The recapture rule is based on the premise that when a patent applicant seeks to secure a patent by responding to a rejection of a claim by cancelling or narrowing the claim, the applicant's intent is ordinarily presumed -- the claim was cancelled or narrowed based on a deliberate judgment that the claim as originally drafted was unpatentable But when the reissue claim is narrower than the cancelled claim in a material respect, a similar conclusion as to the patentee's intent and, hence, as to the absence of "error" cannot be made based exclusively on a comparison of the reissue claim with the cancelled claim. Under the patent laws, the fact that a particular claim is unpatentable over prior art does not mean that a claim that is narrower in some respect necessarily also would be unpatentable. The addition of a particular limitation can result in an otherwise unpatentable claim becoming patentable. Therefore, one cannot presume merely from the act of cancelling a claim that a patent applicant made a deliberate judgment that a second claim that is narrower in a certain respect than the cancelled claim also would be unpatentable. (emphasis added.)

Indeed, the reissue claims of the present application are narrower than the cancelled claims in several material respects, as pointed out above: that the reissue claims only include within their scope drying sections comprising only top felted single tier normal dryer groups. Therefore, it cannot be said that the applicant also admitted that canceled claims containing these material narrowing limitations (which were never presented to the Patent Office during prosecution of the original patent) were also unpatentable. See also, In re

Clement, 45 U.S.P.Q.2d 1161, 1164 (Fed. Cir. 1997) ("the recapture rule does not apply in the absence of evidence that the applicant's amendment was an admission that the scope of that claim was not in fact patentable"); Seattle Box Co., Inc. v. Ind. Crating & Packing, Inc., 221 U.S.P.Q. 568 (Fed. Cir. 1984) ("The recapture rule does not apply here, however, because there is no evidence that Seattle Box's amendment of its originally filed claims was in any sense an admission that the scope of that claim was not in fact patentable"); In re Willingham, 127 U.S.P.Q. 211, 215-216 (CCPA 1960) ("The appealed [reissue] claims differ materially from cancelled claim 12 and there is nothing of record on which to base a holding that the cancellation of claim 12 was in any sense an admission that the reissue claims on appeal were not in fact patentable to appellant at the time claim 12 was deleted").

As the Court of Customs and Patent Appeals stated in In re Wadlinger, 181 U.S.P.Q. 826 (CCPA 1974):

The deliberate cancellation of a claim of an original application in order to secure a patent cannot ordinarily be said to be an "error" and will in most cases prevent the applicant from obtaining the cancelled claim by reissue. The extent to which it may also prevent him from obtaining other claims differing in form or substance from that cancelled necessarily depends upon the facts in each case and particularly on the reasons for the cancellation. (emphasis added.)

Id. at 831 (citing In re Willingham, 127 U.S.P.Q. 211, 215 (CCPA 1974)).

Therefore, Applicant submits that the exception set forth in Hester after Clement was decided is based on well-settled law predating Clement and that the facts of this application fit squarely within the exception. The asserted reissue claims indeed contain material limitations directed to overlooked aspects of the invention, namely, asymmetrically drying a paper using a drying section comprising all top-felted single-tier normal dryer groups. Accordingly, the rejection under the recapture doctrine should be reversed.

C. The Bright-Line Tests For the Recapture Rule Stated in In re Clement Are Not Applicable To The Facts of This Application

In In re Clement, 45 U.S.P.Q.2d 1161 (Fed. Cir. 1997), the Court stated, in its dicta, several bright-line tests for the application of the recapture rule. The Court, however, did not apply any of its bright-line tests because the appealed "reissue claim 49 is both broader and narrower in areas relevant to the prior art rejections." Id. at 1165.

Thus, the Clement court did not address the situation where the reissue claims contain a broadened limitation that had been narrowed during the original prosecution as well as newly added material limitations that were directed to overlooked aspects of the invention as claimed in the original patent, as is the case here. This is understandable since the appealed reissue claims in Clement did not include any additional limitations directed to overlooked aspects of the invention. The Court did however, subsequent to Clement, consider this question in Hester.

Therefore, it is Hester, rather than Clement, that controls this case.

D. Applicant Properly Relied On The Recapture Rule Set Forth In MPEP §1412.02 Prior To The Final Office Action

Consistent with Hester and the cases cited above, MPEP §1412.02 expressly instructs the examiners: "Where the reissue claims also include some narrowing limitation not present in the claims deliberately cancelled in the application, the Examiner must determine whether that narrowing limitation has a material aspect to it. If the narrowing limitation has a material aspect to it, then there is no recapture." (emphasis added.) But, as noted by the MPEP, "if the narrowing limitation is incidental, mere verbiage, or would be inherent even if not recited (in view of the specification), then the claims should be rejected under USC §251 using form paragraph 14.17." Here, the narrowing language is neither incidental, mere verbiage nor inherent to the claim as originally presented. While the original claims covered a wide variety of different types of dryer sections, the rejected claims have been narrowed to one specific type of dryer groups, a top felted single tier normal dryer group, thereby eliminating by narrowing myriad of differing other types of dryer groups covered by the language in the original claims.

Thus, Applicant has properly relied on this MPEP rule and submitted reissue claims containing narrowing material limitations not present in the canceled claims in order to avoid the recapture rule. As was stated by the Federal Circuit in Paltex Corp. v. Mossinghoff, 226 U.S.P.Q. 985, 989 (Fed. Cir. 1985), "The Manual of Patent Examining Procedure is primarily a set of instructions to the examining corps of the Patent Office from the Commissioner. It governs the details of PTO examination, is made available to the public, and describes procedures on which the public can rely." The Court of Customs and Appeals also stated this same governing principle in In re Kaghan, 156 U.S.P.Q. 130, 132 (CCPA 1967): "Our

reasoning in this case involves not only the statutes and the Rules of Practice, which have the force of law insofar as they are consistent with the statutes, but also the MPEP Under these circumstances, we feel that an applicant should be entitled to rely not only on the statutes and Rules of Practice but also on the provisions of the MPEP in the prosecution of his patent application."

For this additional reason, applicant requests that the rejection under the recapture doctrine be reversed.

E. The Recapture Rule Set Forth In An Internal Memorandum To The Patent Examining Corps Dated September 21, 1999 Is Consistent With The Case Law Discussed Herein

On September 30, 1999, Applicant received from Mr. Robert J. Webster, SPRE of the U.S. Patent Office, a fax copy of a memorandum dated September 21, 1999 to the Patent Examining Corps concerning the application of the recapture rule to reissue applications. The memorandum states that the material provided in the memorandum offers "guidance to the patent examining corps in applying the recapture rule to reissue applications" and that "the substance of the material will be incorporated into Chapter 1400 of the MPEP in the next revision." (To date, Applicant has not yet received the next revision of the MPEP incorporating the material of the memorandum.)

As Applicant reads the memorandum, the memorandum does not change the rule set forth in Hester.

In particular, the Board's attention is directed to page 4 of the memorandum, the last paragraph of the section with the heading "Reissue Claims Are Broader In Some Aspects, But Narrower In Others":

If the broadening aspect of the reissue claim relates to the subject matter previously surrendered, the examiner must determine whether the newly added narrowing limitation in the reissue claim modifies the claim such that the scope of the claim no longer results in a recapture of the surrendered subject matter. If the narrowing limitation modifies the claim in such a manner that the scope of the claim no longer results in a recapture of the surrendered subject matter, then there is no recapture. In this situation, even though a rejection based on recapture is not made, the examiner should make of record the reason(s) why, as a result of the narrowing limitation, there is no recapture.

While the memorandum does not go on to provide the Examiners with any basis for determining whether the narrowing limitation "modifies the claim in such a manner that the scope of the claim no longer results in a recapture of the surrendered subject matter," this Board must rely on the guidance previously provided by the Federal Circuit and its predecessors as in Hester Industries, Inc. v. Stein, Inc., Patecell v. U.S., Seattle Box Co., Inc. v. Ind. Crating & Packing, Inc., In re Willingham, and In re Wadlinger. Relying on this guidance, the Board should decide that there is no recapture.

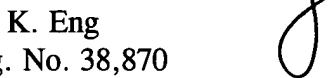
X. CONCLUSION

For the foregoing reasons, it is respectfully submitted that the Examiner has incorrectly applied the recapture rule was and the Examiner's final rejection should be reversed.

Respectfully submitted,

COHEN, PONTANI, LIEBERMAN & PAVANE

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Dated: October 19, 1999

APPENDIX A

--26. A method of reducing the tendency of a paper web to curl in a paper machine, comprising the steps of:

asymmetrically drying the paper web in its thickness direction extending between the top and bottom sides of the paper web to a solids content at which curl-inducing stresses are formed in the paper web by passing the paper web through a plurality of top-felted single-tier normal dryer groups, each of said plurality of normal dryer groups including a single tier of dryer cylinders, a plurality of guide rolls disposed below and between said dryer cylinders, and a single wire transporting said web over the dryer cylinders and beneath the guide rolls so that only the bottom side of said web engages said dryer cylinders; and

subsequently applying sufficient heat and moisture to the asymmetrically dried paper web to relax said stresses in the fiber mesh of the paper web, to thereby control curling of the web.--

--28. The method of claim 26, wherein said guide rolls are suction cylinders. --

--29. The method of claim 26, wherein said moisture is in the form of steam condensate.--

--30. The method claim 26, wherein said heat and moisture are applied across the entire width of the paper web.--

--31. The method of claim 26, wherein said heat and moisture are applied to said web immediately downstream of the location where said stresses are formed.--

--33. The method of claim 26, wherein said heat and moisture are applied to the side of the web not engaging said dryer cylinders.--

--34. A paper machine, comprising:
a dryer for asymmetrically drying a paper web in its thickness direction extending between the top and bottom sides of the paper web to a solids content at which curl-inducing stresses are formed in the paper web, said dryer including a plurality of top-felted single-tier normal dryer groups, each of said plurality of normal dryer groups including a single tier of dryer cylinders, a plurality of guide rolls disposed below and between said dryer cylinders, and a single wire transporting said web over the dryer cylinders and beneath the guide rolls so that only the bottom side of said web engages said dryer cylinders; and
a device for applying heat and moisture to the asymmetrically dried paper web for relaxing said stresses to thereby control curling of the web.--

--36. The paper machine of claim 34, wherein said device for applying heat and moisture is disposed immediately downstream of said plurality of normal dryer groups.--

--37. The paper machine of claim 34, wherein said device for applying heat and moisture extends across the entire width of the paper web.--

--38. The paper machine of claim 35, wherein said guide rolls are suction cylinders.--

--39. The paper machine of claim 34, wherein said stresses in said fiber mesh of the paper web are formed or likely to be formed at a solids content of at least about 70%.--

--40. The paper machine of claim 34, wherein said device for applying heat and moisture includes a steam box.--

--41. The paper machine of claim 34, wherein said heat and moisture are applied to the side of the web not engaging said dryer cylinders.--